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 Claims searched: 1 to 9

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Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
X	1 and 2	GB1060416A (POPEIL) e.g figures 8 and 19
A		WO89/09683A1 (TATHAM CUTLERY)
A		US3112781A (POPEIL)

Categories:

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC^v:

A4C.

Worldwide search of patent documents classified in the following areas of the IPC⁷:

A23N. A47J. B26B. B26D. B26F.

The following online and other databases have been used in the preparation of this search report:

WPI, EPODOC, JAPIO.

PATENT SPECIFICATION

1,060,416

DRAWINGS ATTACHED.

1,060,416



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COMPLETE SPECIFICATION.

Improvements in or relating to a Hand Tool for Cutting, Peeling and Shredding Foodstuffs.

I, SAMUEL JOSEPH POPPIL, of 2920 North Commonwealth Avenue, Chicago, Illinois, United States of America, a citizen of the United States of America, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:

The present invention relates to a hand tool for cutting, peeling and shredding foodstuffs and more particularly to an exceedingly light-weight simplified hand tool which has a multitude of usages about the kitchen in the preparation of both plain and fancy foodstuffs.

Just a few of the examples of the varying items that can be made with the subject hand tool are harlequin-cut tomatoes, oranges, melons, and the like. The harlequin-cut presents a scalloped outer edge at the mid-portion of the tomato or citrus fruit or melon to be cut, and proceeds inwardly to present a sort of scalloped wheel-like appearance. In addition, pinwheel type cuts of citrus fruit, such as lemons for use on cold beverages can also be made. Carrot curls are prepared, and can be readily assembled from cuttings made by the hand tool illustrative of the invention. In addition, the same technique can be employed to make radish roses. For the gentleman in the household, beverage peel slices can be readily made from the outside of a lemon or lime for twisting into popular cocktail beverages. Also, the hand tool can be employed to shred cabbage and carrots, as well as peel potatoes and carrots. In addition, by employing another portion of the hand tool potato eyes can be readily removed. To round off the food preparation talents of the subject hand tool, it is also susceptible of em-

ployment to readily peel citrus fruits, such as lemons, and oranges.

Varying hand tools have been proposed in the past, such as potato peelers, cabbage shredders, and a whole host of kitchen knives. These have invariably had one or two purposes, and oftentimes were quite bulky in operation. In addition, most of the kitchen tools presently commercially available which could be employed, severally, to accomplish the above functions, are composed of many metal parts which are expensive, heavy, oftentimes dangerous to use, and present a whole host of sanitary problems.

It is an object of the present invention to provide a hand tool which is exceedingly small, easy to handle, and will perform a multitude of functions in one structure heretofore unknown.

According to the present invention there is provided a hand tool for cutting, peeling or shredding foodstuffs comprising an anchor for a handle, a beam extending from the handle anchor, and a strip peeler carried at the end of the beam, the strip peeler having walls defining a central tubular opening, one end of the tube forming the opening having a curved portion remote from the handle anchor which forms a cutting edge, the support beam having a smooth face along its longitudinal axis thereby permitting the user to press down on the beam smooth face to actuate the strip peeler.

An embodiment of the present invention, will now be described by way of example, with reference to the accompanying drawings in which:—

Fig. 1 is a perspective partially exploded view illustrating the hand tool illustrative of the present invention showing the removable handle in both positions.

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Fig. 2 is an enlarged perspective view of the cutter body illustrating the blade side portion.

Fig. 3 is a perspective view taken from the opposite side of Fig. 2 illustrating the shredder portion of the cutter body.

Fig. 4 is a front elevation assembled view of the cutter assembly.

Fig. 5 is a top view of the cutter assembly illustrated in Fig. 3.

Fig. 6 is an end view of the cutter assembly illustrated in Figs. 3 and 4 taken from the left end portion thereof.

Fig. 7 is a front end view of the cutter assembly shown in Figs. 3 and 4 showing the cutting assembly in front on configuration.

Fig. 8 is a front elevational view similar to Fig. 4 with the cutter body portion reversed in order to illustrate the shredder in its exposed position for operation.

Fig. 9 is an end view of the cutter assembly illustrated in Fig. 8 taken from the right end portion thereof and illustrating the strip peeler portion of the unit.

Fig. 10 is a partially sectioned view of the strip peeler portion and shredder showing the blade in front elevation.

Fig. 11 is a bottom view of the shredder portion of the cutter body taken from underneath the right hand portion of Fig. 8.

Fig. 12 is reversed and for end from Fig. 11, showing the top portion of the shredder assembly and the strip peeler.

Fig. 13 is an enlarged view of the cutting and piercing teeth taken at 13 in Fig. 4.

Fig. 14 is a transverse enlarged section of the peeler teeth taken at 14 in Fig. 2.

Fig. 15 is a view of the potato illustrating a partially cut portion of the peeling.

Fig. 16 is a perspective view of a baked potato cut open forming a split affect to expose the interior mashed portions.

Fig. 17 is a perspective view of a block of cheese and cheese strips cut therefrom.

Fig. 18 is a view of a lemon from which peeled strips have been cut and showing at the right hand portion thereof a pinwheel slice of the subject lemon.

Fig. 19 is a sequential view illustrating first a strip cut from a carrot, secondly, a carrot after it has been shredded, thirdly, a carrot curl cut therefrom, and fourthly the shredded carrot for use in a salad.

Fig. 20 is a perspective view of a radish cut into a radish rose for decorative purposes on a relish tray.

Fig. 21 shows an orange scribed about its mid-portion for harlequin cutting.

Fig. 22 shows the orange of Fig. 21 after the harlequin is made.

Fig. 23 shows a half of the orange shown in Figs. 21 and 22 after the sections are parted.

Fig. 24 is another view of an orange peeled

by the peeling portion of the subject hand tool.

Fig. 25 is a view of a jack-o-lantern illustrating how portions of the hand tool may be used to cut the decorative portion thereof.

The invention relating to the hand tool 10 will be better understood in the light of the various tasks about the kitchen which it can perform. By referring to the third sheet of drawings in Figs. 15-24, it will be observed that a whole host of varying cuts and treatments to vegetables and foodstuffs can be made.

For example, in Fig. 15 there is shown a potato 60 from which the peel 61 has been removed. The entire potato may be peeled, or in the case of a cucumber for fancy cut, the peels may be spaced and slices made into a pinwheel configuration. Fig. 16 shows a baked potato 62 which is cut with a harlequin or tooth type cut. The interior may then be removed and mashed up and placed back within the potato, the ends being squeezed in order to create a decorative pattern at the cut 64.

Fig. 17 shows a cheese 65 from which the cheese strips 66 are cut by another portion of the hand tool. The same portion of the hand tool which cuts the cheese strips 66 can also be employed to cut a lemon or lime 68 in order to produce the lemon twist strips 69 which are so popular in bar type beverages. After a plurality of the lemon strips 69 have been sliced in parallel fashion from the lemon 68, transverse slices can be made in order to produce a pinwheel lemon slice 70 which can be sliced and placed over an iced tea glass, lemonade, and similar beverages.

Fig. 19 discloses the varying treatments that can be made to a carrot. For example, the carrot 71 can be peeled, the peelings 72 dropping off for disposition. The grated carrot 74 may also be prepared which has an unusual and decorative exterior effect and is simultaneously cleaned and prepared for use. In addition, the heavy cut curl 75 may be off from the carrot 71, soaked in water after being prepositioned with a toothpick, and served on a decorative relish tray. The product from the grated carrot 74, as illustrated in the form of shredded carrot 76 may be used in preparing a salad or similar tasty foodstuffs.

A radish rose 78 such as shown in Fig. 20 can be prepared by using the same portion of the hand tool as is employed to cut the lemon strips 69 and the cheese strips 66. An inexperienced user can, with very little practice, make perfect radish roses for decorating the relish tray.

Fig. 21 to 23 show how an orange can be cut into a beautiful harlequin cut. First a girdle 80 is scribed around the orange 79 as shown in Fig. 21. Thereafter, using the scribe line as a guide, the harlequin cut 81

1,060,416

3

is made as shown in Fig. 22 running around the entire periphery of the orange. Thereafter, as shown in Fig. 23, the two halves need only be separated to display the beautiful harlequin cut face 82 as shown. Additionally, a peeled orange 84 may be prepared as shown in Fig. 24 by using another portion of the hand tool.

Finally, it will be observed in Fig. 25 that even an additional decorative function can be well served by the subject hand tool. A jack-o-lantern 85 is there shown in which the teeth 86 are cut with the same portion of the hand tool as cuts the harlequin-cut, the nose 88 is similarly cut or plugged, and even the eye pupils 98 may be cut by using the subject tool.

The hand tool itself forms a completed cutter assembly 10 as illustrated in the upper left hand portion of Fig. 1. The principal portions of the cutter assembly 10 are a removable handle 11 which matingly and in sheath like fashion engages the cutting assembly 21. The cutting assembly 21, as illustrated in the right hand portion of Fig. 1, may be reversed by removing unsheathing the same, and reversing it end for end and subsequently lockingly ensheathing the cutting assembly 21 again in the removable handle 11.

It will be appreciated that when a busy housewife is working in the kitchen, a hand tool of this character with its many cutting elements can be somewhat dangerous and cut the fingers. By designing the hand tool in such a manner that it can be readily molded out of plastic, this risk is held to a minimum. Furthermore, the locking assembly which sheathingly engages the handle 11 is such to further reduce the risk of cutting the fingers. These advantages and functions should be borne in mind in connection with the detailed description.

Referring now to Fig. 2, it will be seen that the cutter body 12 has a central hollow handle anchor portion 14. A blade beam 15 extends in one direction from the handle anchor 14, and a blade having a v-shaped cross section extends in the other direction. The blade beam 15 has a strip peeler 18 at its far end portion which is employed to cut, among other things, the lemon strips 69 as shown in Fig. 18. The construction of the handle anchor 14 in cooperation with the strip peeler 18 is such as to support an articulated centrally slotted blade 16 therebetween, the handle anchor 14 and strip peeler 18 being held in strong structural relationship by the blade beam 15. The blade 16 can cut carrot curls 75, peel carrots 71, or peel potatoes (see Figs. 15, 19).

Referring now to Fig. 3, it will be seen that the cutting assembly 21 with its v-shaped cross-section blade extends in one direction from the handle anchor 14. The

blade beam 15 extends in the opposite direction and supports the centrally slotted blade 16 and also a shredder 19 depending from its lower portion and including a plurality of shredder teeth 20. These shredder teeth 20 will produce shredder carrots 76 as shown in Fig. 19.

The cutting assembly 21 with the v-shaped cross-section blade is also provided with a peeler 22 at the upper portion or apex of the v-shaped cross-section blade. A plurality of peeler teeth 24 appear on one side of the apex of the v-shaped cross-section blade as illustrated in Fig. 3, the serrated portions of which protrude slightly over the top of the apex as illustrated in Fig. 2. Because the peeler teeth 24 are on but one side portion of the v-shaped cross-section cutting assembly 21, the opposite portion serves to strip the fruit peeling from the fruit body 84 (see Fig. 24).

The peeler teeth as shown in Fig. 14 are formed so that the peeler teeth tops 23 are in the plane of the outside face of one of the legs of the v-shaped cross-section blade and the grooves 27 formed between the peeler teeth are cut beneath the said outside face. The peeler teeth are cut back from their tops 23 to form a back face 17 which extends vertically downwards to the apex of the v-shaped cross-section of the cutter assembly 21. Thus, in the vertical plane all of the teeth (see Figs. 4, 13) project a scalloped or serrated appearance. Similarly scalloped edges are projected in the horizontal plane (see Fig. 5). The peeler teeth 24 are also used for scribing (see Fig. 21) in connection with making the harlequin cut 82.

The cutting teeth 30 (see Fig. 13) have cutting teeth grooves 37 and tops 53 which extend in a plane normal to the piercing edge 26 and cutting edge 29 respectively of the free edges of the blade (see Figs. 5, 7), to presents a downwardly oriented serrated edge. The peeler teeth tops 23, because of the undercut back face 17, do not cut extensively when the harlequin cut 82 is made. However, when peeling, the back face 17 of the peeler teeth combines with the peeler teeth 24 to present an effective cutting and deflecting edge.

When the cutter assembly 10 is being employed to cut the harlequin cut 81, 82 such as shown in Fig. 23, the piercing point 25 at the very forward portion of the cutting assembly 21 enters into the orange 79 or other foodstuff first. Thereafter, the piercing edge 26, because its straight edged construction makes an even cut, begins to progressively and uniformly cut to the v-shape cross section of the cutting assembly 21 by means of the vertically oriented piercing teeth 28. After the piercing edge 26 is completely within the item to be harlequin cut, the lower free cutting edges 29 with their

4

1,060,416

cutting teeth 30 complete the cut. The peeler teeth 24 of the peeler 22 have a minimum cutting action as set forth above. The v-shaped cross-section blade of the cutting assembly 21 is pushed towards the center portion of the food until the outer portion of the foodstuffs are engaged by the handle anchor 14.

As referred to above, it is important to be able to remove and reverse the handle 11. This is accomplished by means of the releasable lock assembly 31 which includes an upstanding curved finger release portion 32, the front and rear portions of which present curved finger support faces 33. It will be appreciated that the curve readily engages the thumb as the user reverses the handle 11. Referring now to Fig. 5 in particular, it will be seen that the forward portion of the tapered handle 11 has a rectangular key slot 35 at its top portion which serves as a locking slot to wedgingly and lockingly engage the rectangular locking base 34 of the releasable lock assembly 31.

The utilization of the subject hand tool will necessarily result in certain retained foodstuffs on various portions of the face and in the teeth which, although undesirable, may remain there for two or three days in the event the unit is not immediately washed after use. By providing the handle end 36 on the removable handle 11 with a plurality of handle vents 38, either the cutting assembly 21 can be permitted to dry if it is within the removable handle 11, or the blade beam portion of the cutter assembly 10 may be permitted to similarly dry and be vented. For purposes of the manufacturer's need in naming the product and otherwise identifying the same, a label recess 39 is provided in the top face of the handle 11.

One of the highly desirable usages of the subject cutter assembly 10 is the strip peeler 18. The strip peeler, as indicated above, is supported at the end portion of the blade beam 15, and its detailed construction is best illustrated in Figs. 9-12 inclusive. There it will be seen that a semicircular strip peeler edge 40 is presented at the lower portion of the strip peeler 18, which has an exterior tapered base 41 (see Fig. 9). The peel stripper inner portion 42 tapers away from the taper angle of the tapered base 41 as best illustrated in Fig. 10, and provides a relief in upward motion of the cut peeled portion to permit the same to eject out of the top of the peeler opening 43. The peel guide face 44 is vertical, and is tapered into a rectangular configuration as illustrated in the top view Fig. 12. As pointed out above, the strip peeler 18 makes lemon strips 69, cheese strips 66, radish roses 78 and pin wheel slices 70.

The peeler 18 cooperates with the blade beam 15 in order to support the centrally

slotted blade 16. As will be best viewed in Fig. 10, the outer blade support 45 comprises an outer blade notch 46 which is slightly narrower at its open face portion than the interior portion to permit the blade mounting studs 50 to snappingly fit into the outer blade notch 46. The inner blade support 48 is in the handle anchor 14, and comprises a cylindrical hole or recess therein. The inner blade recess 49 (see Fig. 10) is of sufficient size to permit the blade 16 a small degree of longitudinal motion along the axis of the studs 50 in order to facilitate operation. The blade stop 47 serves to limit the pivotal movement of the centrally slotted blade 16.

The blade beam itself, particularly as viewed in Fig. 11, has a plurality of progressively diminishing in diameter blade beam relief holes 51 in its lower face which serves to lighten the unit without sacrificing any degree of strength. The blade beam outer tapered face 52 blends into the handle anchor portion in smooth tapered relationship as illustrated in Figs. 3 and 11 especially. The blade beam inner face 54 is parallel with and either along the longitudinal axis of the cutter body 12 or in spaced parallel relationship therewith in order to provide sufficient relief between the centrally slotted blade 16 and the support beam 15 (see particularly Figs. 11, 12).

The manufacturer of the unit, as may well be appreciated, proceeds by preparing a plastic mold for the 3 plastic parts; namely, the handle 11, the cutter body 12, and the handle anchor base plug 55. While the handle anchor could be made solid, by providing the base plug 55 which snappingly engages the same, the weight of the unit is held to a minimum commensurate with the strength of the design for the multitude of functions achieved. The handle anchor base insert 55 is snap fitted into position. The centrally slotted blade 16 is also snap fitted into position by inserting the blade mounting stud into the handle anchor inner blade recess 49 first, and then snappingly placing the other blade mounting stud 50 into the outer blade notch 46. A suitable label for the cutter assembly 10 is then inserted in the label recess 39 when desired, and the removable handle 11 placed into locking relationship with the releasable lock 31 by engaging the locking base 34 of the cutter body 12 with the locking slot 35 on the removable handle 11. The hand tool is then ready for boxing, and shipment and ultimate use by the housewives.

WHAT I CLAIM IS:—

1. A hand tool for cutting, peeling or shredding foodstuffs comprising an anchor for a handle, a beam extending from the handle anchor, and a strip peeler carried

1,060,416

5

- at the end of the beam, the strip peeler having walls defining a central tubular opening, one end of the tube forming the opening having a curved portion remote from the handle anchor which forms a cutting edge, the support beam having a smooth face along its longitudinal axis thereby permitting the user to press down on the beam smooth face to actuate the strip peeler.
- 6 2. A hand tool according to claim 1 wherein the support beam adjoins the tube of the strip peeler at the opposite end to the cutting edge.
- 10 3. A hand tool according to claim 1 or 2 wherein a plurality of shredder teeth depend from the beam.
- 15 4. A hand tool according to claim 1, 2 or 3 wherein an articulated centrally slotted blade is mounted parallel to the support beam between the strip peeler and handle anchor.
- 20 5. A hand tool according to any one of the preceding claims comprising a v-shaped cross-section blade extending from the anchor, a peeler cutting edge at the apex of the v-shaped cross-section blade, cutting teeth at the base of the v-shaped cross-section blade legs, linear piercing point edges at the free end of the v-shaped cross-section blade, the beam extending longitudinally opposite the v-shaped cross-section blade, a blade mounting means in the strip peeler and a blade mounting means in the handle anchor.
- 25 6. A hand tool according to claim 5 when appendant to claim 4 wherein the articulated centrally slotted blade is secured by the strip peeler and blade mounting means thereby mounting the same in parallel relation to the beam, and a hollow handle proportioned to reversibly engage the handle anchor while simultaneously ensheathing reversibly the v-shaped cross-section blade or the beam and its associated strip peeler and shredder.
- 30 7. A hand tool according to claim 5 or 6 wherein the cutting teeth at the base of the v-shaped cross-section blade legs and piercing point edges are oriented so that they lie normal to the longitudinal axis of the v-shaped cross-section blade.
- 35 8. A hand tool according to any one of claims 4 to 7 wherein the blade mounting means of the articulated centrally slotted blade comprise blade end studs fixed within recesses thereby mounting the same in parallel relation to the beam.
- 40 9. A hand tool according to any one of claims 6 to 8 wherein the beam extends in one direction from the anchor and the v-shaped cross-section blade extends oppositely from the beam and is longitudinally aligned therewith, the handle having a quadrilateral cross section defining a hollow complementary interior, said handle being open at one end, and means defining a locking slot on the handle opening at the open end of said handle, the handle open end being proportioned to matingly engage the handle anchor, and said handle being vented at its closed end position to permit air circulation drying of foodstuffs collected in the v-shaped cross-section blade or beam.
- 45 10. A hand tool according to claim 9 comprising an upstanding finger release element atop the anchor having a rectangular base, said locking slot being proportioned to releasably engage the finger release element.
- 50 11. A hand tool according to any one of claims 5 to 10 wherein the v-shaped cross-section blade has an apex and two legs each with cutting edges, a pair of piercing edges extending from the free end of the v-shaped cross-section blade adjacent the apex of the V downwardly and rearwardly to the cutting edges of the legs and terminating forward of the v-shaped cross section blade midpoint, a plurality of teeth on the piercing edges and cutting edges, said teeth being formed between grooves the axes of which are normal to the longitudinal axis of the v-shaped cross-section blade.
- 55 12. A hand tool according to claim 11 wherein the teeth are vertically oriented when the v-shaped cross-section blade axis is in a horizontal position.
- 60 13. A hand tool according to claim 11 or 12 comprising a peeler edge at the apex of the v-shaped cross-section blade comprising a plurality of teeth.
- 65 14. A hand tool according to claim 11 or 12 comprising a peeler edge at the apex of the V having a plurality of teeth recessed in the plane of one of the legs of the blade, said peeler edge having a back face in a vertical plane terminating at the apex of the v-shaped cross-section blade.
- 70 15. A hand tool for cutting, peeling or shredding foodstuffs comprising, in combination, a central handle anchor, a hollow handle removably and reversibly secured to the anchor, an upwardly extending finger portion on the anchor to facilitate removal of the handle, a beam extending in one direction from the handle anchor, a strip peeler at the free end of the beam, said strip peeler having a wall defining a tubular opening generally perpendicular to the axis of the beam, the remote end of said wall tapering centrally to define a cutting edge at one end of the tubular opening, a smooth surface atop the beam to provide a finger pressure point, a V-shaped cross-section blade extending in the opposite direction from the handle anchor defining an apex at the top of the "V" from which intersecting leg portions having free edges depend, a plurality of teeth oriented upwardly and extending longitudinally along the V-shaped cross-section blade apex, the forward portions of the depend-
- 75 80 85 90 95 100 105 110 115 120 125 130

6

1,060,416

ing leg portions of the "V"-shaped cross-section blade tapering to a point at the apex, whereby after strip peeling the handle may be reversed and the V-shaped cross-section blade point inserted to initiate the action of the peeler teeth to complete the peeling action.

16. A hand tool according to claim 15 wherein the peeler teeth on the "V"-shaped cross-section blade apex are oriented in the plane of one of the depending leg portions and define an undercut back face and project a scalloped edge.

17. A hand tool according to claim 15 wherein a strip peeler wall, a beam wall, and a handle anchor wall define a longitudinal mounting recess, pivotal mounting means in the strip peeler wall and handle anchor wall, and an articulated centrally slotted blade secured within said mounting means generally parallel with beam wall.

18. A hand tool according to claim 15 wherein a plurality of shredder teeth depend from the beam along its long axis and remote from the smooth surface atop the beam.

19. A hand tool according to claim 15

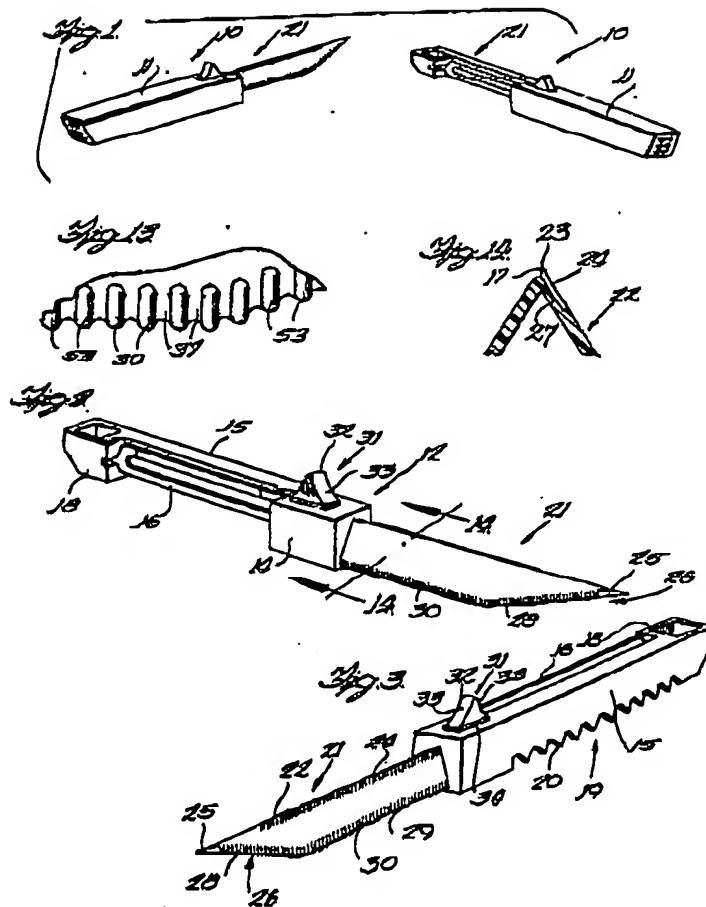
wherein a plurality of teeth are provided along the free edges of the leg portions of the "V"-shaped cross-section blade to facilitate insertion and removal of the blade in making harlequin designs.

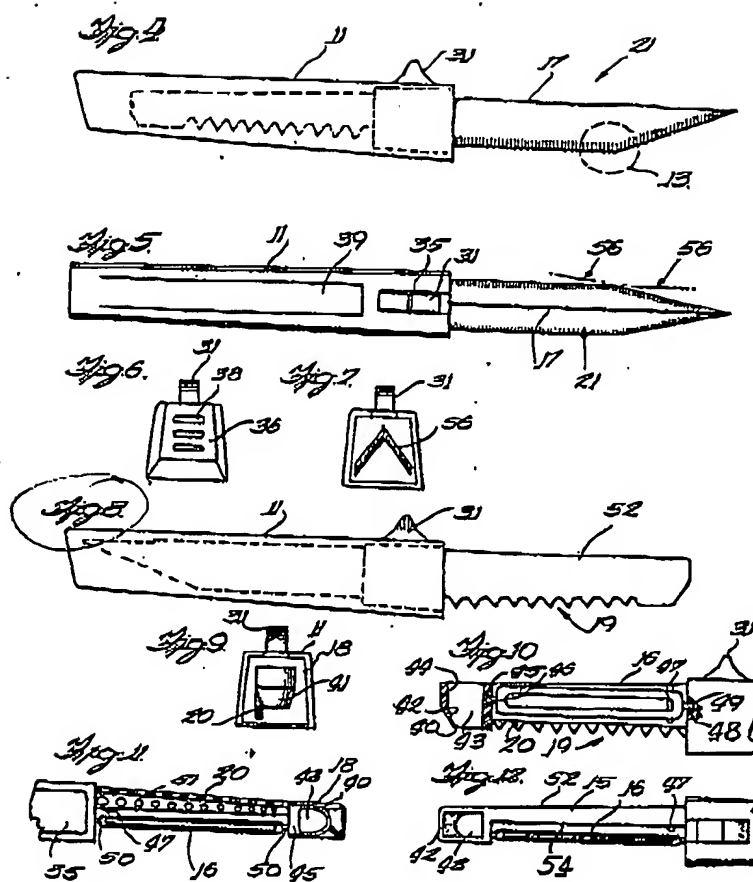
20. A hand tool according to claim 15 wherein the handle anchor has an isosceles trapezoidal cross-section insertable within a complementary opening in the handle, and the handle has slot means to nestingly receive upwardly extending finger portion of the anchor.

21. A hand tool for cutting, peeling or shredding foodstuffs arranged and adapted to operate substantially as herein described with reference to the accompanying drawings.

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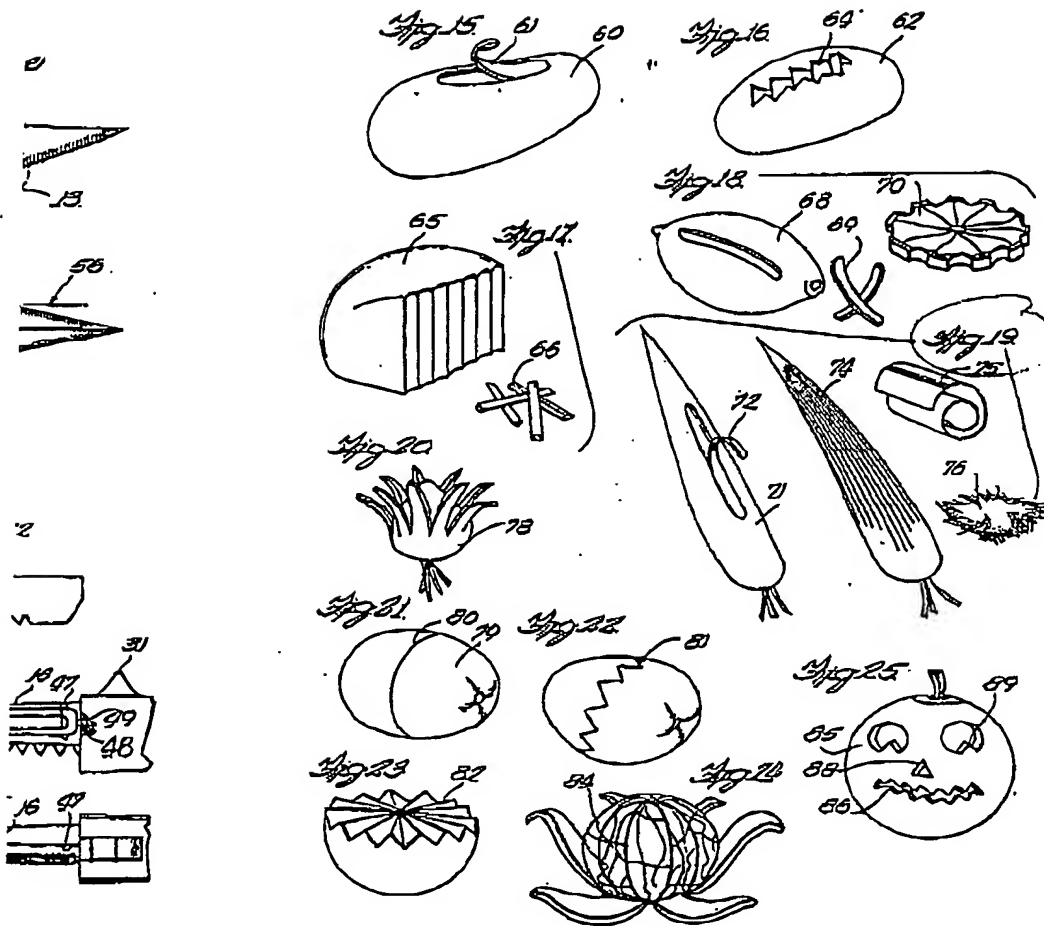
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